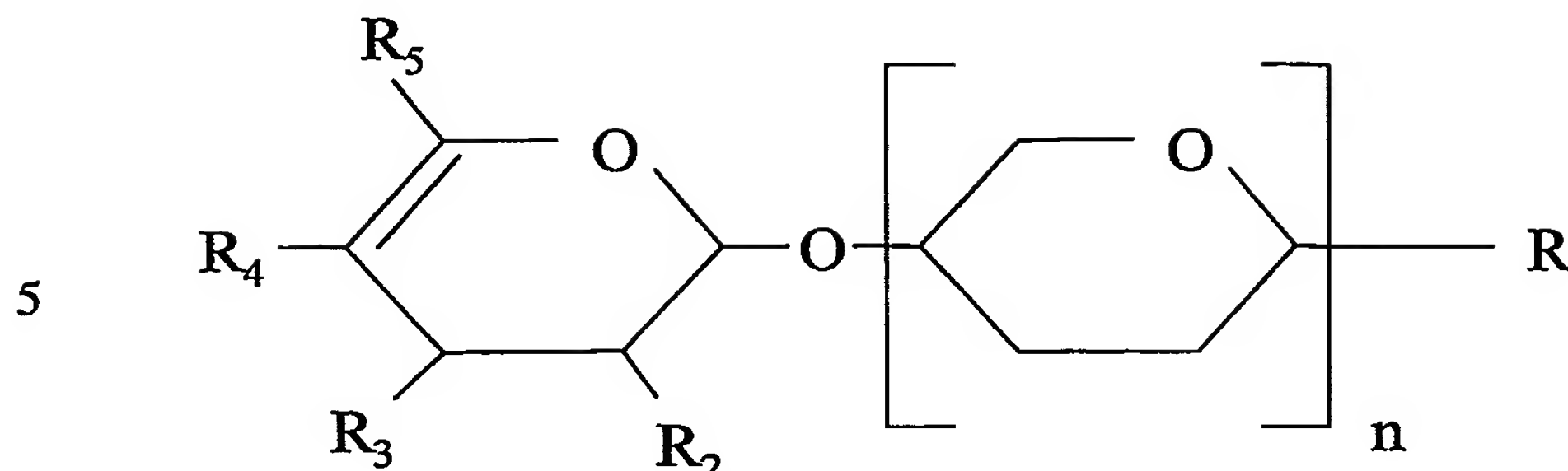


## CLAIMS

1. Use of acid oligosaccharide and neutral oligosaccharide in the manufacture of a composition for use in a method for the treatment and/or prevention of an immune system related disorder in a mammal, said method comprising administering to said mammal a composition comprising a therapeutically effective amount of acid oligosaccharide and neutral oligosaccharide.
2. Use of acid oligosaccharide and neutral oligosaccharide in the manufacture of a composition for use in a method for enhancing the immune response in a mammal and/or a method for modulating the immune system in a mammal, said method comprising administering to the mammal a composition comprising acid oligosaccharide and neutral oligosaccharide.
3. Use according to claim 1, wherein the immune system related disorder is selected from the group consisting of autoimmune disorders, hereditary or conditional induced immunodeficiency, support for vaccinations, allergy Type 1, allergy Type 2, allergy Type 3 and allergy Type 4.
4. Use according to any one of the preceding claims, wherein the acid oligosaccharide comprises at least one terminal uronic acid unit.
5. Use according to claim 4, wherein the uronic acid unit is selected from the group consisting of galacturonic acid, glucuronic acid, guluronic acid, iduronic acid, mannuronic acid, riburonic acid and alduronic acid.
6. Use according to any one of the preceding claims, wherein the terminal hexose unit has the following structure:



10 wherein;

R is selected from the group consisting of hydrogen, hydroxy or acid group; and at least one selected from the group consisting of R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> represent N-acetylneuraminic acid, N-glycoloylneuraminic acid, free or esterified carboxylic acid, sulfuric acid group and phosphoric acid group, and the remaining of R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> represent hydroxy and/or hydrogen; and n is an integer from 1-5000.

15

7. Use according to claim 4, wherein the terminal uronic acid has the structure as depicted in claim 7 and wherein R represents one selected from the group consisting of hydrogen, hydroxy or acid group ; and one selected from the group consisting of R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> represents free or esterified carboxylic acid; and the remaining of R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> represent hydroxy and/or hydrogen.

20

8. Use according to any one of the preceding claims, wherein the acid oligosaccharide has a degree of polymerisation between 1 and 250, preferably between 1 and 10.

25

9. Use according to any one of the preceding claims, wherein the neutral oligosaccharide is selected from the group consisting of cellobiose, cellodextrins, B-cyclodextrins, indigestible dextrin, gentiooligosaccharides, glucooligosaccharides, isomaltooligosaccharides, isomaltose, isomaltotriose, panose, leucrose, palatinose, theanderose, D-agatose, D-lyxo-hexulose, lactosucrose, α-galactooligosaccharides, β-galactooligosaccharides, transgalactooligosaccharides, lactulose, 4'-galatosyllactose,

30

synthetic galactooligosaccharide, fructans - Levan-type, fructans - Inulin-type, 1 f- $\beta$ -fructofuranosylmystose, xylooligosaccharide, raffinose, lactosucrose and arabinooligosaccharides.

5 10. Use according to claim 9, wherein the neutral oligosaccharide selected is from the group consisting of galactooligosaccharide, fructooligosaccharide and transgalactooligosaccharide.

10 11. Use according to any one of the preceding claims, wherein the composition comprises two chemically distinct neutral oligosaccharides, one selected from the group consisting of galactose based neutral oligosaccharide and one selected from the group of fructose and/or glucose based oligosaccharide.

15 12. Use according to claim 11, wherein the composition comprises fructooligosaccharide and at least one selected from transgalactooligosaccharide and galactooligosaccharide.

13. Use according to any one of the preceding claims, wherein the method comprises the enteral administration of the composition.

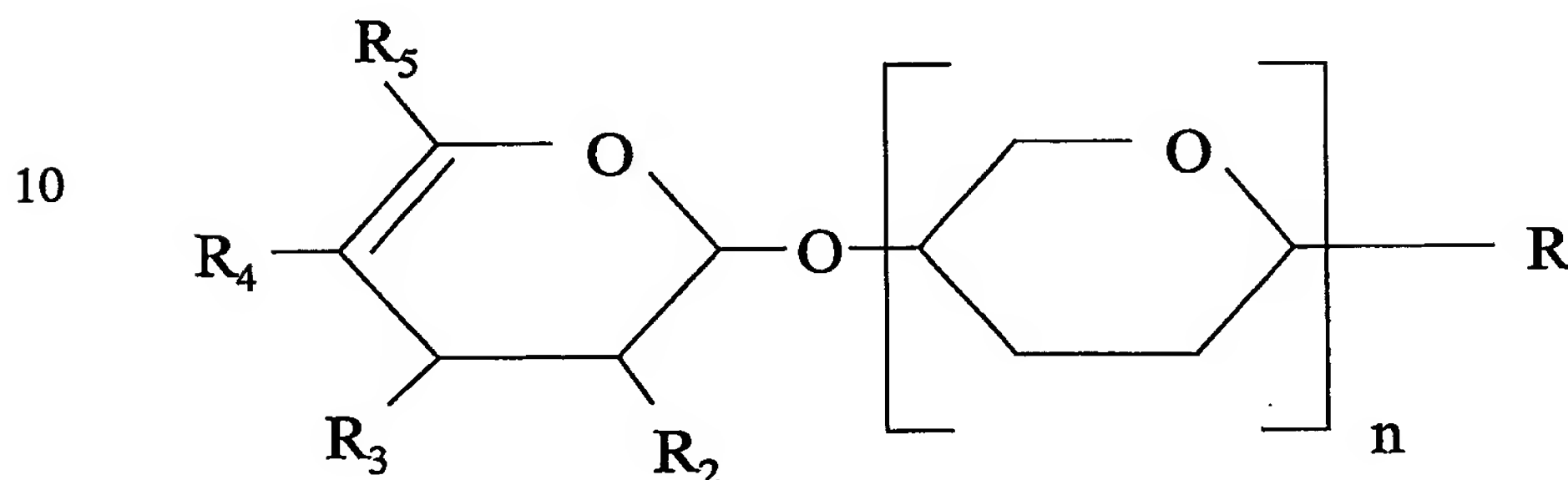
20 14. Use according to any of the preceding claims, wherein the composition is administered to a human in the age of 0-1 year.

25 15. A food composition comprising between 5 and 50 en% lipid, between 10 and 60 en% protein, between 15 and 90 en% carbohydrate, acid oligosaccharide and neutral oligosaccharide, wherein said acid oligosaccharide comprises at least one terminal uronic acid unit, and

said neutral oligosaccharide is selected from the group consisting of cellobiose, cellodextrins, B-cyclodextrins, indigestible dextrin, gentiooligosaccharides, glucooligosaccharides, isomaltooligosaccharides, isomaltose, isomaltotriose, panose, 30 leucrose, palatinose, theandrose, D-agatose, D-lyxo-hexulose, lactosucrose,  $\alpha$ -galactooligosaccharides,  $\beta$ -galactooligosaccharides, transgalactooligosaccharides,

lactulose, 4'-galatosyllactose, synthetic galactooligosaccharide, fructans - Levan-type, fructans - Inulin-type, 1 f- $\beta$ -fructofuranosylmystose, xylooligosaccharides, lafinose, lactosucrose and arabinooligosaccharides.

- 5 16. Composition according to claim 14, wherein the acid oligosaccharide has the following structure:



wherein;

- R is selected from the group consisting of hydrogen, hydroxy or acid group; and at least one selected from the group consisting of R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> represent free or esterified carboxylic acid, and the remaining of R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> represent hydroxy and/or hydrogen; n is an integer from 1-5000; representing the number of hexose units said hexose units being uronic acid.
- 20

17. Composition according to any of claims 14 or 15, wherein the composition has a caloric density between 0.1 and 2.5 kcal/ml.
- 25

18. Composition according to any of claims 14-17, wherein the composition has a viscosity below 250 mPas at a shear rate of 100 s<sup>-1</sup> at 20°C.

19. Liquid composition comprising fat, carbohydrate and protein and comprising, per 100 ml of the liquid composition, between 0.5 and 1 g soluble indigestible oligosaccharides, comprising between 0.4 and 0.7 g indigestible [galactose]<sub>n</sub>-glucose comprising  $\beta$ -linked
- 30

saccharides; wherein n is an integer between 1 and 60, i.e. 2, 3, 4, 5, 6, ....., 59, 60; between 0.01 and 0.1 g indigestible polysaccharide carbohydrate comprising a chain of at least 10  $\beta$ -linked fructose units; and between 0.04 and 0.3 g acid oligosaccharides said acid oligosaccharides having the structure as defined in claim 16.

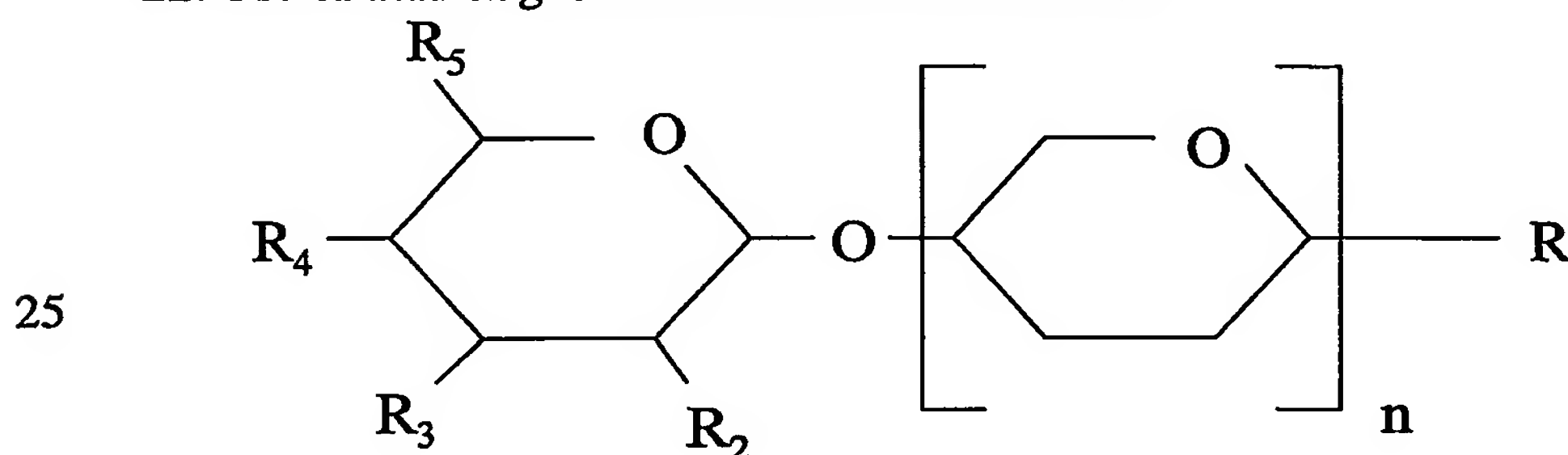
5

20. Use of acid oligosaccharide in the manufacture of a composition for use in a method for the treatment and/or prevention of an immune system related disorder selected from the group consisting of autoimmune disorders, hereditary or conditional induced immunodeficiency, support for vaccinations, allergy Type 1, allergy Type 2 and allergy Type 3 in a mammal, said method comprising administering to said mammal a composition comprising a therapeutically effective amount of acid oligosaccharide as defined in claim 22.

21. Use of acid oligosaccharide in the manufacture of a composition for use in a method for the treatment and/or prevention of subjects suffering from cancer, in particular cancer patients that are or have been subjected to chemotherapy, radiation and cancer patients that are cachectic, said method comprising administering to said subject a composition comprising a therapeutically effective amount of acid oligosaccharide as defined in claim 22.

20

22. Use of acid oligosaccharides with the formula



wherein:

R is selected from the group consisting of hydrogen, hydroxy or acid group; and at least one selected from the group consisting of R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> represents N-acetylneuraminic acid, N-glycoloylneuraminic acid, free or esterified carboxylic acid,

30

sulfuric acid group and phosphoric acid group, and the remaining of  $R_2$ ,  $R_3$ ,  $R_4$  and  $R_5$  representing hydroxy and/or hydrogen; and  
n is an integer between 1-5000.

- 5 for the manufacture of a composition for the treatment and/or prevention of AIDS and/or HIV infection.